WHAT IS CLAIMED IS:

1. A traffic scheduling apparatus for a base station in a mobile communication system, for transmitting real-time traffic and non-real-time traffic having different QoS (Quality of Service) to a particular mobile station, the apparatus comprising:

a delay adjuster for determining transmission order so that the real-time traffic is transmitted preferentially over the non-real-time traffic;

a transmission buffer for receiving and storing the real-time traffic and non-real-time traffic output in the transmission order determined by the delay adjuster; and

a rate adjuster for calculating assigned power of a time slot serving as a transmission unit for transmitting a predetermined amount of traffic stored in the transmission buffer, changing the transmission order of the traffic according to available time slot power, and packing the traffic in the time slot according to the changed transmission order.

2. The traffic scheduling apparatus of claim 1, wherein the delay adjuster is based on

$$FT_i^k = FT_i^{k-1} * \left(\frac{\text{priority} \times \alpha + 1}{\text{priority} + 1} \right) + \frac{L_i^k}{\Phi_i}$$

where FT_i^k represents a finish time of k^{th} traffic from an i^{th} user, L_i^k represents a traffic length, Φ_i represents a weight, and α represents a ratio of real-time traffic to the total traffic arrived at each session.

3. The traffic scheduling apparatus of claim 2, wherein the priority is a value extracted from an IP (Internet Protocol) header.

4. A traffic scheduling method for a base station in a mobile communication system, for transmitting real-time traffic and non-real-time traffic having different QoS (Quality of Service) to a particular mobile station, the method comprising the steps of:

determining transmission order so that the real-time traffic is transmitted preferentially over the non-real-time traffic; and

calculating assigned power of a time slot serving as a transmission unit for transmitting a predetermined amount of the transmission order-determined traffic, changing the transmission order of the traffic according to available time slot power, and packing the traffic in the time slot according to the changed transmission order.

5. The traffic scheduling method of claim 4, wherein the step of determination of transmission order comprises a delay adjusting step based on

$$FT_i^k = FT_i^{k-1} * \left(\frac{\text{priority} \times \alpha + 1}{\text{priority} + 1} \right) + \frac{L_i^k}{\Phi_i}$$

where FT_i^k represents a finish time of k^{th} traffic from an i^{th} user, L_i^k represents a traffic length, Φ_i represents a weight, and α represents a ratio of real-time traffic to the total traffic arrived at each session.